



**IMAZON**

AMAZON INSTITUTE OF  
PEOPLE AND THE ENVIRONMENT

# 2007

## Activities Report



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# 2007 Activities Report

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PEOPLE AND THE ENVIRONMENT

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# PRESENTATION

In 2007 Imazon intensified its commitment with the Amazon's sustainable development. The *Forestry Transparency* project - with almost real time deforestation monitoring and wide dissemination of results - was expanded to the State of Pará. The impact of this initiative was disclosed with great media repercussion of the monthly deforestation statistics and the use of such information by decision makers. Imazon was the first institution to indicate the increase in deforestation on the second quarter of 2007, after a tendency of decrease from August 2005 to July 2007. This information culminated in the rearrangement of the Deforestation Prevention Plan of the Federal Government.

Another Imazon initiative was the signature of the technical cooperation with the Federal Prosecution Service of Pará, for the monitoring of illegal deforestation in Conservation Units and Indigenous Lands. In 2007, Imazon sent to the Federal Prosecutors 47 formal complaints of illegal deforestation cases (about 9 thousand hectares) in Pará's Protected Areas. Part of these complaints is already under investigation by the prosecutors. This initiative with the Federal Prosecutor Service was expanded to the States of Amapá and Roraima. Imazon also supported the Federal Audit Court in an audit about the Institutional Management in the Amazon by providing information from studies on the enforcement of environmental crimes.

Regarding to public policies, Imazon had great achievements. The Forest and Community Program published the Manual for Communitarian Forest Management, which was used widely by the Brazilian Forestry Service as a source of information for its program on sustainable development. Moreover, Imazon contributed to the launch of Sustainable Amazon Forum, an initiative that involves over 110 key organiza-

tions, including the social movement, business sector, environment NGOs and research institutes. We also contributed to elaborate the management plans of 12.8 million hectares of State Conservation Units in Pará. Finally, Imazon joined the Pact for Zero Deforestation, in partnership with other NGOs, aiming to reduce deforestation to zero by 2015.

This year was also remarkable to Imazon because we became reference to national and international media regarding environmental and Amazon issues. There were over 140 articles mentioning Imazon in printed papers, 20 in weekly magazines, and dozens of articles in the internet media. Our researchers made more than 50 interviews on TV channels and 30 on the Radio. We were also searched as a source of information by important opinion makers in Brazil. The dissemination of Imazon's studies was also supported by our geoinformation portal, ImazonGeo, which makes available to the public all the geographical base of information produced by Imazon.

Regarding the administrative goals, we have consolidated our internal control system and, for the third consecutive year since this practice started, our accounts were audited and approved by an international audit company. Finally, 2007 is the last year I sign our activities report opening letter. My term as Executive Director finishes in December 2008 and I would like to thank all the members of Imazon's for the support and commitment during all these years we have been together. I would also like to wish the next leaders of the institution to be successful in their endeavors.

**Carlos Souza Jr.**  
*Executive Director*

**Ana Cláudia Rodrigues**  
*Assistant Executive Director*

Imazon is a non-profit research institution qualified by Oscip<sup>1</sup>, whose mission is to promote sustainable development in the Brazilian Amazon through studies; support to the creation of public policies; wide dissemination of information and professional training.

Imazon was founded in 1990 and its main office is located in Belém (Pará), Eastern Brazilian Amazon.

## VALUES

**Sustainability.** The solutions for problems regarding the use of natural resources must be based on principles of sustainability, which is the capacity an ecosystem has to maintain ecological processes and functions, biological diversity and productiveness as the time passes by. That means respecting all the forms of lives and the cycles of nature, valuing cultural diversity, strengthening local sustainable economies, considering environmental and social costs involved on productive processes and promoting efforts to share benefits.

**Ethics.** Adopting a respectful relation regarding other institutions and social participants; respecting copyrights; do not discriminate race, creed, social or ideological position on internal and external relations.

**Use of Scientific Method.** Imazon carries out objective and independent analysis, based on scientific methods proved by specialized literature.

**Excellence of Quality.** Imazon's products go through a severe internal quality control and external partners reviews. These

practices strengthen credibility and respect for the Institute.

## VISION

The Amazon as an area where biodiversity, forestry coverage and associated environmental services will be conserved and the sustainable development will be implemented in such a way to guarantee honorable conditions of life for all its inhabitants.

## FOUNDATION

In the late 1980s, the Amazon's destruction images became more constant on national and international media. Fast deforestation, burning, predatory logging and the proliferation of gold mining put a lot of environmental and social pressure on the area. Back then, Christopher Uhl, a North American ecologist and researcher was visiting Embrapa (Brazilian Agricultural Research Corporation), and researching about the degraded pasture of the Eastern Brazilian Amazon. Uhl's main concern was the scarce documentation of land use change on the Amazonian landscape. He understood that the scarcity of researches on these issues weakened the debate regarding the causes of such environmental degradation and the alternatives for a sustainable approach. Uhl also realized that there were very few graduate professionals able to study the phenomena in a multidisciplinary way and report them didactically and strategically to decision makers. He identified an opportunity to help the Amazon and, together with Adalberto

<sup>1</sup> Regulated by Law no. 9790, dated March 23, 1999, Public Interest non-governmental Organization (*Organização da Sociedade Civil de Interesse Público*) (Oscip) is a title granted by the Justice Department to non-profit private corporate company, with the objective to make partnerships and agreements easier with the government. To receive such qualification it is necessary to fulfill several requirements, especially the ones related to institutional transparency.

Veríssimo, David McGrath and Paulo Barreto, they decided to create Imazon, an institute of applied and multidisciplinary research aiming to study (emphasizing the empirical approach) and look for solutions to the crucial problems of use and conservation of the Amazon's natural resources.

The idea to create Imazon was born in 1988, but the institution was only founded on July 10, 1990. For over two years, Uhl, Veríssimo, MacGrath and, after some time, Barreto discussed exhaustively the mission, the culture of the organization and the approach of the work of the future institution. These discussions were based on the revision of other institutional experiments in Brazil and in the tropics, as well as on conversations and debates with several intellectual, social and political leaders of the Amazon. Since then, Veríssimo and Barreto continue working at Imazon. The participation of Chris Uhl was significantly reduced when he returned to the United States in 1995, where he is a full professor at the Pennsylvania State University. MacGrath, on the other hand, is a professor of NAEA (Institute of Advanced Amazonian Studies) and an associated researcher of IPAM (Amazonian Research Environmental Institute). Chris Uhl and David MacGrath are effective members of Imazon's General Assembly.

Imazon's consolidation along these 17 years would not be possible without the contribution of over a hundred employees as well as dozens of collaborators (visiting and associated researchers) and members of the General Assembly, the Board of Directors and the Advisory Council of the Institute. Besides, the

role performed by its Executive Directors<sup>2</sup> in this period, who are currently working at the Institute, was essential. Finally, Imazon has a wide and productive partnership with several public, private, non-governmental institutions in its several activities, in addition to the partnership with national and international foundations, who generously have been supporting its activities.

### **SOME OF THE MAIN CONTRIBUTIONS OF IMAZON ALONG 17 YEARS:**

Imazon's studies on forestry and ecology management were the base to establish a forest management system for traditional companies and communities. By the end of 2007, the area managed in the Amazon was over 5 million hectares - from which more than one third had FSC's green label.

Studies and initiatives in the scope of public policies led by Imazon had direct impact on the creation of approximately 24 million hectares of protected areas in the Amazon, from which 12.7 million hectares are on the North of Pará.

Imazon's research on ecology of mahogany, the most valuable tropical timber specie, was crucial for its inclusion on CITES list of endangered species.

Studies on forest policy and economics contributed decisively to the definition of Brazilian Forest Law enacted in 2006, whose main objective is to promote the sustainable use of Amazonian public forests.

The Sustainable Amazon report published in 2000, together with the World Bank

<sup>2</sup> Executive Directors: Adalberto Veríssimo (1990-1993), André Guimarães (1994-1995), Paulo Amaral (1996-1998), Paulo Barreto (1999-2003) and Carlos Souza Júnior (2004- current Director). All executive directors are currently working as researchers of the Institute, except André Guimarães, who is the vice-president of Imazon's Board of Directors.

was the basis for the policy to expand National and State Forests in the Amazon.

The Amazon human pressure report published in 2006 in partnership with WRI, has been used to guide the efforts to create the Protected Areas.

Imazon was the first Institute to develop a satellite image monitoring system to detect logging and non-official roads in the Amazon in 2004.

In 2006, Imazon developed the Deforestation Alert System (SAD) which was a key tool to independently monitor deforestation in the Amazon in a monthly basis.

Imazon started a partnership with Federal and State Prosecution Service to monitor the deforestation on protected areas in Pará State.

**Interdisciplinarity.** It allows a holistic and transversal approach of several topics that influence the Amazon's sustainability. Studies include economic and social, geographic, ecologic, political, legal and institutional analysis.

**Search for solutions.** Studies are targeted to the solution of problems of use and conservation of natural resources in the Amazon.

**Empirical approach.** Imazon emphasizes the empirical and the systematic collection of primary data about the use and conservation of natural resources in the Amazon.

**Scientific method.** Imazon makes objective and independent analyses based on scientific methods proved by specialized literature.

## ACTIVITIES

### Research

Imazon's research activities include a social-economic diagnosis of the land use in the Amazon; the development of methods to evaluate and monitor this use; the implementation of demonstrative projects; the analysis of public policies; and the proposal of alternatives for sustainable development of these current economic activities. Imazon's work is based on the following principles:

### Dissemination

The dissemination of the results of Imazon's studies is done through national and international scientific journals (Science, Nature, Proceedings of the National Academy of Science, World Development, Forest Ecology and Management, Conservation Biology, International Journal of Remote Sensing), manuals, videos, booklets, books, technical articles and policy briefs with recommendation to public policies. Most of the studies are available for free at Imazon's website ([www.imazon.org.br](http://www.imazon.org.br)).



In the media, studies are disseminated through special articles written for newspapers, magazines and widely visited websites/audience. In addition, Imazon's researchers participate as lecturers on several scientific and political events on regional, national and international forums.

### **Public Policies**

Imazon's studies have effectively contributed to the adoption of wide-ranging public policies in the Amazon. The main contributions are on strategic areas, such as landscape planning (ecological-economic zoning and land tenure), creation and implementation of conservation units, improvement of command and control systems (with emphasis on satellite images monitoring), improvement on the enforcement of the Environmental Crimes Law (mechanisms to effectively guarantee environmental violator's punishment), economic incentives (for example, credit for activities of sustainable use), recommendations for environmental licensing, technical rules of forest management, among others.

Imazon has been invited in numberless occasions to be part of technical commissions and to observe decision makers on the executive, legislative and judiciary fields on the definition of public policies, as well as opinions regarding complex and emergent issues in Amazon discussions.

### **Professional Training**

One of Imazon's objectives is to train researchers so they will be able of doing multidisciplinary applied research. This work involves the definition of a research project, collection and analysis of data and presentation of the results in scientific papers and professional meetings. As of 2007, Imazon had already trained over 150 professionals in ecology, forestry engineering, environmental law, rural economy, geoprocessing, regional planning and public policies. Many of these professionals hold top level positions in key NGOs, private sector, as well as public institutions.

# PROGRAMS

## LANDSCAPE MONITORING

The objective of this program is to develop techniques to detect, quantify and monitor deforestation, logging, non-official roads, gold mining and other forms of human pressure through satellite images. The results of these surveys are stored in a databank connected to a GIS (Geographical Information System), which allows fast creation of information to meet the needs of external demands in regional planning and ZEE (ecological-economic zoning). The research activities of this program are:

**Detection of environmental risks.** It deals with regional diagnosis of human pressure in the Amazon and economic-range templates of activities involving the land use (logging, cattle ranching, soybean). These studies provide an information base to identify threats to Protected Areas and to areas that have potential for conservation. Moreover, they are useful to modeling future sceneries of the Amazon, such as the impacts of road paving and the construction of hydroelectric dams.

**Deforested mapping.** Developing techniques to process satellite images to identify deforestation and monitor it on a periodic basis (in general, all data is published on a monthly basis). These monitoring and forest control methods have been transferred to key stakeholders such as the public environmental agencies (federal, state and county level), public prosecutors and NGOs.

**Logging mapping.** Imazon is the pioneer on the development of techniques to process satellite images to identify and map logging and forests degraded by fire. These techniques have been currently tested to evaluate the effectiveness and the quality of forest management plans.

**Vegetation mapping.** The Institute uses satellite data merger techniques for the detailed mapping of forestry typology on a 1:50,000 scale. Data used include radar images (JERS-1) obtained in drought and rain periods, topography (SRTM -Shuttle Radar Topographic Mission), Landsat images and deforestation maps. This type of information is used to identify potential areas for the creation of sustainable use conservation units such as National and State Forests.

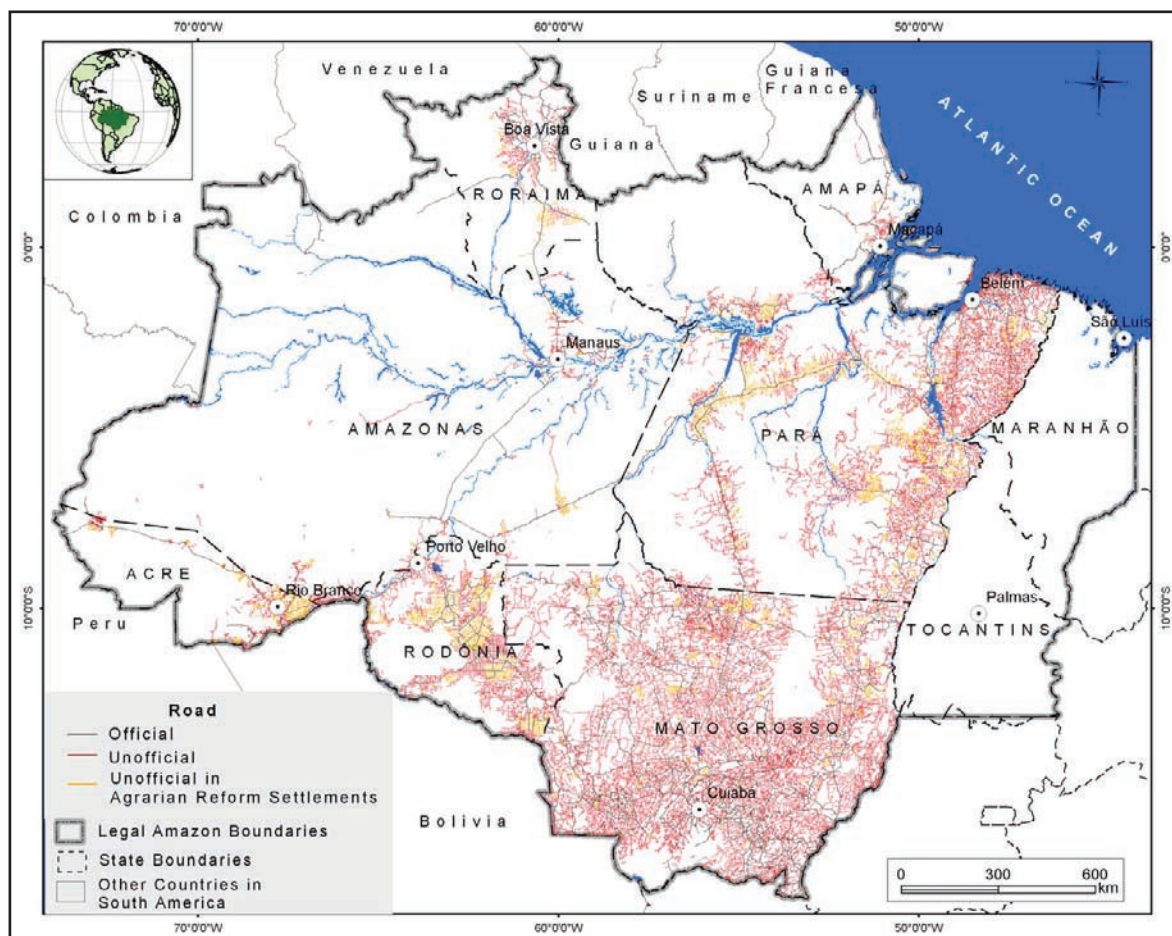
**Roads mapping.** Survey of the location of non-official roads in the Legal Amazon using Landsat images. This information is used to evaluate human pressure, to identify priority areas for inspection and agrarian planning, and to evaluate environmental risk of economic activities in the Amazon.

**Coordination:** Carlos Souza Jr.

**Team:** Amintas Brandão Jr., André Monteiro, Anderson Costa, Cíntia Balieiro, Júlia Gabriela, Kátia Pereira, Márcio Sales, Rodney Salomão, Sâmia Nunes, Victor Lins and Sanae Hayashi.

**Sponsored by:** Gordon & Betty Moore Foundation, David & Lucile Packard Foundation, Usaid, AVINA Foundation, Embassy of the Netherlands, US Forest Service.





Non-official roads in the Legal Amazon.

## FOREST POLITICS AND ECONOMY

The forest sector has the potential to have key role on the Amazon's sustainable rural development when it allies conservation to social-economical development. However, the forest sector has historically developed on a predatory and migratory fashion due to the incipient adoption of forest management. The sector is currently going under deep changes, including the forestry management decentralization, advances on control and monitoring systems and perspectives to handle public forests.

The goal of this program is to evaluate and support forestry public policies through a detailed analysis of their evolution, of the dynamic and of the social-economic trends of the forestry sector in the Amazon. The program also proposes to evaluate and propose economic incentives to the adoption of forest management and compensation for the environmental services provided by the forest, including the forestry products market. Imazon develops the following projects under this program:

**Sustainable Consumption Alliance.** This project aims to provide market mechanisms to support forest management and

the sustainable consumption of forest products in the Amazon and in the Atlantic Forest. This initiative, which began in 2005, is a partnership with Friends of the Earth -Brazilian Amazon Programa together with Imaflora and the Biosphere Reserve of the Atlantic Forest. Imazon's role in the project is to coordinate actions to increase the forest-managed area in the Amazon through the adoption of forest management systems and the technical support to PFCA Association (Brazilian Amazon Certified Forestry Producers Group).

**SAMFLOR.** The gradual adoption of forest management practices is an innovative initiative to spread its environmental, social and economic benefits. SAMFLOR is based on state-of-the-art management practices whose objective is to support companies and communities which are interested in adopting sustainable forestry operations.

**Implementation of Flotas.** Imazon has supported the creation, management and monitoring of State and National Forests in the Amazon. As of 2007, the Institute has cooperated with Sema (Pará) and CI, MPEG and Imaflora on preparing the management plan for 12.8 million hectares of State conservation units in the Northern Pará State.

**Logging Centers.** To subsidize public policies and the public planning of the expansion of the forestry sector, Imazon has generated field surveys in all timber centers of the Legal Amazon (in 1998 and 2004). These studies has brought key information about the Amazon's logging sector, including volumes of production, types of products, jobs generated, harvesting and processing technology, markets and trends of the sector.

***Coordination:** Adalberto Verissimo.*

***Team:** Denys Pereira, Daniel Santos and Mariana Araújo.*

***Collaboration:** Roberto Palmieri and Sílvia Kataoka (Imaflora).*

***Sponsored by:** Gordon & Betty Moore Foundation,*

*European Commission and ITTO.*

***Partnerships:** Friends of the Earth -Brazilian Amazon Program, Imaflora, PFCA, Atlantic Forest Biosphere Reserve and Sema (Pará).*

## FOREST AND COMMUNITY

Traditional communities and rural family producers in the Amazon domains part of the last forestry reserves in public and private areas, which are strategic for the conservation of the region. It is estimated that these communities have about 1.2 million km<sup>2</sup> of forests. However, the unfavorable institutional support, the deficient management, the land tenure insecurity and the low technical capacity have driven communities to illegality.

The overall objective of this program is to document, analyze and support communitarian and small scale forest management initiatives in the Legal Amazon. The main activities of the program are:

**Community Forests.** The general objective of this activity is to integrate information about ecology and forest management techniques, land tenure regularization and studies on market to promote communitarian forest management in communities at the mouth of the Amazon river (Pará). Therefore, Imazon develops studies on the management and ecology of species important to the economy of the communities; surveys on market for non-logging forestry products and analyses and tracking of land tenure regularization processes ranging from local agreements settled by the communities to policies from the State (Iterpa) and Federal (Incra) land agencies.

**Market Analysis.** The goal is to contribute to the commercialization of the Amazon's communitarian forest products. Therefore, is the team engage on data collection, analyses of markets and the creation of a databank regarding communitarian forest management initiatives in the Brazilian Amazon. This information will be used to increase commercialization options of communitarian forestry products.



**Management by small producers.** This project tries to understand the aspects that contribute to the adoption of forest management by small producers in Brazil, Bolivia, Ecuador and Peru. Furthermore, it investigates the obstacles faced by these initiatives in the technical, market and normative fields. The objective is to use this information to propose public policies that increase and make the adoption of small-scale forest management effective in the Amazon.

**Lessons about communitarian management.** Imazon identifies and disseminates technical and managerial tools for social organizations and producers' organizations that work on forest community-based management. The project also includes a comparative analysis of the current experiments in Brazil, Guatemala and Nicaragua. The objective is to stimulate the communities to have more autonomy and control on their forest management initiatives. Finally, the project promotes regional and international interchanges to share new forms of technical and managerial tools for the forest community-based management in the Amazon and the Central America.

**Monitoring of Traditional Communities.** Imazon monitors human pressure on areas of traditional communities and indigenous lands in Southern Amazon. The project also aims to train local communities to use GPS, read maps and make participative mapping of their lands and resources, thus promoting local capacity for the monitoring of communitarian areas and indigenous lands.

**Coordination:** Paulo Amaral.

**Team:** Andréia Pinto, Franci Nava, Heron Martins, Marcelo Galdino, Simone Bauch and Waldir Pinto.

**Collaboration:** Edson Vidal (Esalq/USP), Manuel Amaral (IEB), Erin Sills (North Carolina State University - USA), Max Steinbrenner (Ufra), Benno Pokorny (Cifor).

**Partnerships:** IEB, Fase, Cifor, Ufra, CSF Brasil and Kanindé.

**Sponsored by:** EU, Usaid, Inco and Sebrae.

## FOREST TRANSPARENCY

The general objective of this program is to contribute towards the reduction of illegal deforestation in the Amazon through independent deforestation monitoring (primarily using SAD); wide divulgation of the results to key-participants and the use of this information to guide actions regarding punishment of the environmental violators.

In 2007, the program focused its activities on the States of Pará and Mato Grosso. In 2008, the monitoring will be expanded to the whole Brazilian Amazon. To achieve this goal, Imazon created SAD, a system designed to generate deforestation maps and monthly frequency-based deforestation statistics using images of the satellite MODIS. The system for detection and analysis of deforestation has contributed to guide inspection actions from environmental agencies. At the same time, SAD allows a monthly tracking of deforestation trends.

All these information based on SAD has been disclosed in monthly bulletins, with wide effect in regional and national media. Besides, the maps generated are available to interactive consultation on Imazon's geographic information portal, ImazonGeo ([www.imazongeo.org.br](http://www.imazongeo.org.br)). In addition to the operation of SAD, the main activities of this program are:

**Monitoring.** Tracking of deforestation and forestry degradation (logging exploitation, non-official roads, hot pixels etc) using geoprocessing tools.

**Environmental Law.** Documentation, analysis and collection of indicators about the enforcement of environmental law against the violators.

**ImazonGeo.** Maintenance of a geoinformation portal that can be accessed at [www.imazongeo.org.br](http://www.imazongeo.org.br), created to provide data regarding the situation, dynamic and sceneries of the Amazon to key-institutions and strategic participants, as well as to the public in general.

**Dissemination.** Wide disclosure of results (through bulletins) to strategic audience including public agencies, public prosecutors, environment NGOs, other social organizations and the society in general (disclosure in the media).

**Coordination:** Carlos Souza Jr. and Adalberto Veríssimo.

**Team:** Anderson Costa, Amintas Brandão Jr., Brenda Brito, Elis Araújo, Heron Martins, Kátia Pereira, Paulo Barreto, Rodney Salomão, Sanae Hayashi.

**Technical Cooperation:** Sema (Mato Grosso), Sema (Pará), MPF (Pará), MPE (Pará).

**Sponsored by:** Lucile & David Packard Foundation, AVINA Foundation, Gordon & Betty Moore Foundation, Embassy of the Netherlands.

**Partnership:** ICV (Mato Grosso).

## SPECIAL PROJECT: SUSTAINABLE BELÉM

The urban population in the Legal Amazon reached 73% in 2004. The challenge to transform these cities into more sustainable places is huge and urgent, since consumption and public policy choices made in the cities will greatly influence the future of the world.

Sustainable Belém is an initiative from Imazon with the objective of looking for effective and sustainable solutions for the big cities in the Amazon. This project presupposes a strong alliance among the various social segments, long-term vision, targets and indicators to monitor and report the advances and obstacles to make a city sustainable. The focus is *Grande Belém* (greater Belém, formed by 5 municipalities in the metropolitan area of Belém), in Pará, but the studies based on this metropolis can be adapted to other Amazonian cities. The primary activities in this project are:

**State of Belém Report.** A biannual social-environmental report on the Greater Belém. It deals with the core issues of everyday life, such as urban forests, parks, garbage, water, sewage, transportation, noise pollution, visual pollution and historical sites.

**Sustainable Belém website.** The interactive and dynamic webpage is going to have information regarding relevant issues so as to promote a healthy and fair life in the Greater Belém. The website will provide “Belém Sustentável” reports in addition to promote surveys, maintaining a forum about social-environmental issues and having updated information about the minimum agenda for the sustainable urban development.

**Coordination:** Netuno Leão.

**Team:** Adalberto Veríssimo and Carla Costa.

**Sponsored by:** AVINA Foundation, Companhia Vale, Sol Informática, Banco da Amazônia, Clínica Lobo and Cikel Brasil Verde S.A.



Cover of the book Sustainable Belém.



## PROGRAMS FINISHED IN 2007

### AMAZON SCENERIES

In 1998, Imazon began several studies to understand how will infrastructure policies and the demand for products (soy, meat, log, etc.) affect soil occupancy in the Amazon in the next decades. The objectives of the program were mapping and diagnosing environmental impacts and the role of the Amazon's agricultural poles in the regional economy, as well as modeling the future land use and the possible impacts over the natural resources. The results of this program comprise 26 publications, including three books, 14 articles and chapters of books, a volume of *Série Amazônia* (Amazon Series), two editions of the series of The State of the Amazon and six publications in other formats. The most relevant applications of the study are:

**Sustainable Amazon. 2000.** Published together with the World Bank, this study identified opportunities and limitations for sustainable development in the Amazon. The authors said that the forest management could offer a more stable economy in comparison to the one generated by the agriculture and ranching. The authors also suggested public policies to stimulate the sustainable use of forestry resources. This study had strong influence on the creation of the National Program of Forests, which includes a component of creation and management of public forests in the Amazon.

**Cattle Ranching in the Amazon. 2005.** Several publications about this issue analyzed the factors that contributed to the fast growth of cattle ranching in the Amazon, evaluated the future scenarios of this activity and suggested policies to combine cattle ranching expansion with forest conservation. The maps that showed cattle ranching expansion potential due to the expansion of roads have been

used to justify the creation of conservation units in critical areas of the Amazon.

**Human Pressure in the Amazon. 2006.** This report showed that almost half of the Amazon forest was under human pressure due to many different activities. These analyses were used to select priority areas for the creation of conservation units in the States of Pará and Amazonas.

In 2007 the program was concluded with the accomplishment of two studies to be published in the beginning of 2008.

**Market and Future of the Cattle Ranching in the Amazon.** It analyzes the factors that caused strong growth of cattle production in the region and how this growth has been contributing to deforestation. The exportation of beef in the region had an expressively increase between 2000 and 2006. Between 1996 and 2006, 75% of deforestation happened due to cattle ranching.

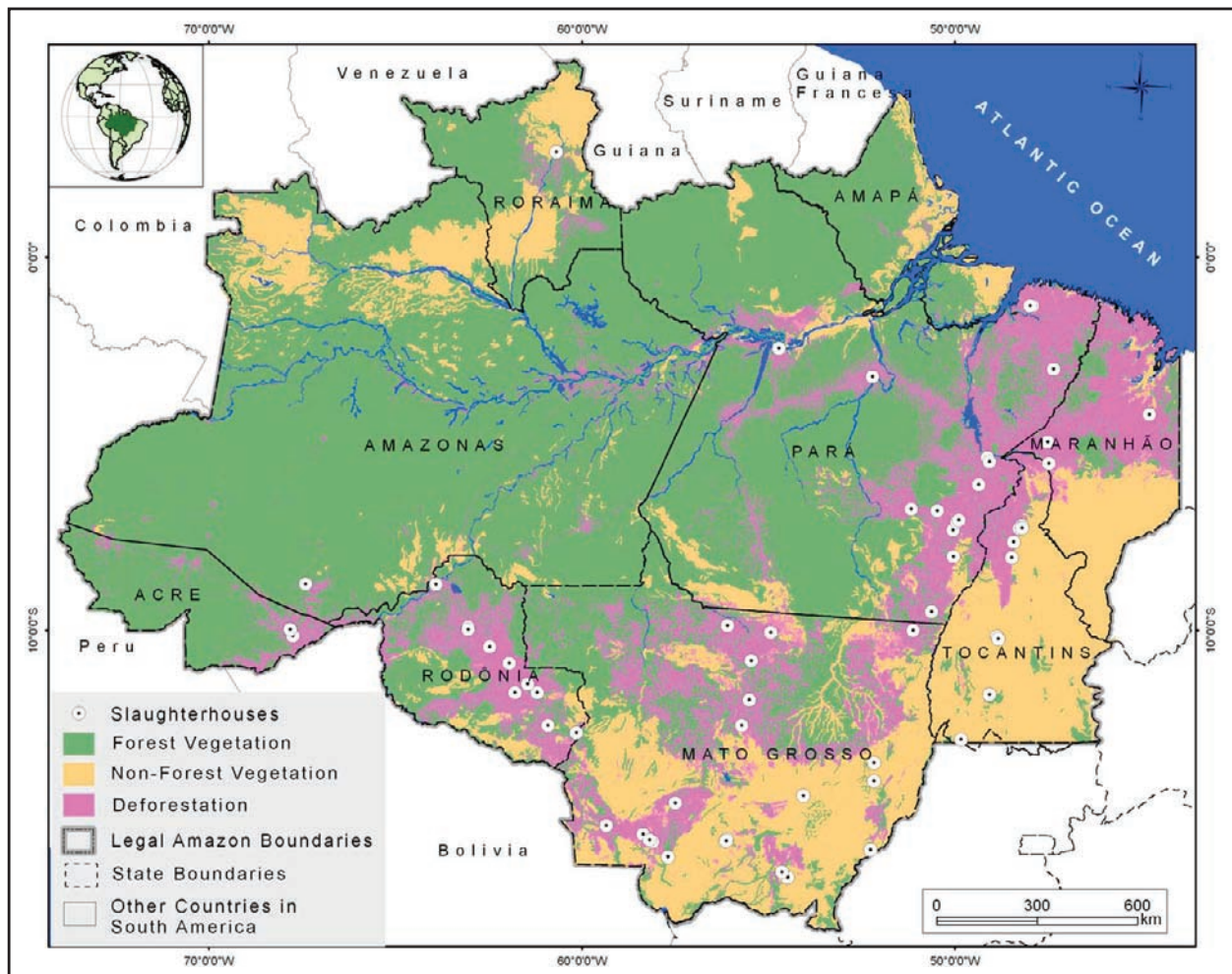
**Who owns the Amazon?** The sustainable development in the Amazon depends on a clear definition of who has the right to use and property rights on the lands of the region. However, these rights are uncertain or unknown for large area already occupied in the region. The study analyzes a governmental policy begun in 1999 to re-cadastre rural properties as well as its development.

As of 2008, vectors and impacts of human occupation in the Amazon (logging exploitation, agriculture, cattle ranching, etc.) will be transversal topics at Imazon's different programs.

*Coordination in 2007: Paulo Barreto.*

*Team between 1997 and 2007: Adalberto Verissimo, André Monteiro, Andréa Valente, Andréia Pinto, Brenda Brito, Carlos Souza Jr., Paulo Barreto, Marky Brito, Rodney Salomão, Ritaumaria Pereira, Sanae Hayashi.*

*Sponsored between 1997 and 2007 by: Usaid, Ford Foundation, Betty & Gordon Moore Foundation, World Bank, Willian & Flora Hewlett Foundation.*



Distribution of deforestation and slaughterhouses installed in the Amazon in 2005.

## ECOLOGY AND FOREST MANAGEMENT

This program evaluated, developed and disseminated techniques for the sustainable forest management. In addition, it provided a comparative study on the growth of trees considering (i) the forests exploited with management techniques and subject to silvicultural

treatments (liana cuttings, for example) and (ii) the ones exploited on a conventional way. The team also conducted specific studies (auto ecology) regarding log species which have economic and ecologic importance, such as mahogany (*Swietenia macrophylla* King).

An important point of the program was the Forest management Pilot Project that hap-



pened in Paragominas, Pará (starting in 1992). This project is a reference to the advances in the Amazon's forest management. The results showed that forest management was technically and economically viable. There was a large dissemination effort for the results of the project, which resulted in several publications, a video (which was awarded the best screenplay at the National Festival of Ecologic Movie in 1994) and a forestry manual (Forest Forever). The experiment developed in about 250 hectares in Paragominas was the base for the forest management expansion in the Amazon, which already surpasses 5 million hectares. Finally, the most recent results of the program (especially on the autoecology area) can be used to guide with more details silvicultural practices that are appropriated to the biological potential of log species; forecast more safely cutting cycles and forestry productivity for different exploitation intensities; and guide forest management planning on regional scales considering appropriate cutting and productivity cycles.

The program resulted in 55 publications including four books, 32 articles and chapters of books, seven editions of the *Série Amazônia* and nine publications in other formats. Some of the main publications of the program are:

**Forest Forever Guide. 1998.** Published together with WWF - Brasil, this manual shows the development of a management integrated template that is formed by several techniques adopted before, during and after exploitation, to minimize the impacts on the forest and increase its productivity. This manual has been used by many participants involved with for-

est management in the Brazilian Amazon and, recently, other tropical regions.

**Mahogany in the Brazilian Amazon: Ecology and Management Perspectives. 2002.** This book describes the ecology of mahogany (*Swietenia macrophylla*) in its area of occurrence, focusing the Brazilian Amazon and proposing forest management and the plantation of the species. It also debates the options for its conservation and measures to control its exploitation and commerce. This book contributed with relevant information for the creation of a specific law for mahogany and its inclusion in attachment II of CITES.

**Ecology and Management of Liana in the Eastern Amazon. 2004.** It summarizes the studies performed by Imazon regarding management and ecology of liana. The book, organized in seven chapters, talks about subjects such as: liana management, liana species diversity, regeneration of liana in clearings, silvicultural treatment with liana, liana biomass, ecology of species of liana and summary of studies on liana in the eastern Amazon. This publication targets are students, teachers and researchers who are interested on ecology and forest management.

**Coordination in 2007: Paulo Amaral.**

**Key Collaborators:** Edson Vidal, Mark Schulze, Jeffrey Gerwing, Paulo Barreto, Adalberto Verissimo, Christopher Uhl.

**Financial Support (from 1992 to 2007):** USAID, WWF, DFID, Cifor, Government of Amapá, CITES, Dendrogene-Embrapa, , GTZ, IEB, Imaflora, IPGRI, PFCA, MMA, Overbrook, ProManejo/LASAT, Rainforest Alliance, IICA.

## RESEARCH

**Forest Transparency.** This year Imazon has continued with forest transparency activities in Mato Grosso (which began in 2006) and started generating data from the deforestation and its publication through Forestry Transparency Bulletin for the State of Pará. Imazon has made technical cooperation agreements with the State Environmental Agencies in both States.

The Bulletins' information had great impact in the media and were key to establish a public policy debate over deforestation throughout the year. Furthermore, such information contributed to increase transparency and the debate in the society regarding the increase of deforestation in 2007, after three years of consecutive declining. The Ministry of Environment also used data of the Bulletin to restructure the Deforestation Prevention Plan of the Federal Government.

Imazon also contributed to the development of governmental monitoring and controlling systems - monitoring of forest management plans, which can be duplicated on future forestry concessions - and by providing information about critical areas for state environmental agencies' investigation actions.

**Protected Areas Monitoring.** The creation of Protected Areas is one of the most efficient policies to protect biodiversity, preserve forests and reduce negative impacts that come from predatory economic activities. These areas add up 42% of the Amazon territory; about half of them are conservation units and the other half is indigenous land.

In 2007, Imazon has started monitoring illegal deforestation within the Protected Areas. In 2008 this work will be extended to the rest of the Amazon, except Tocantins. In 2007

Imazon also published monitoring data and data about threats to Protected Areas, which were widely disseminated by the media.

**Imazon/Prosecution Service Partnership.** In November 2007, Imazon signed a technical cooperation agreement with the State and Federal Prosecution Services (MPE and MPF) to provide deforestation data in Protected Areas with the objective of accelerating enforcement actions against illegal deforestation in these areas. Imazon generated and sent to MPF (Pará) 47 formal complaints of deforestation, accounting for 9 thousand hectares of deforested forests. As a result, in December 2007, MPF (Pará) started actions to prevent deforestation in these areas: 43% of the formal complaints were used as basis for the Federal Police investigations; in 17% the prosecutors brought Civil Actions at the Federal Court and the other 40% are still under analysis.

**Support to Federal Audit Court.** Imazon supported the Federal Audit Court (TCU) providing data and participating in the revision of TCU plan of an audit about Amazon's Institutional Management. This audit, which has never been seen in Brazil, shall focus on the main actions of Ibama, Incra, Funai, Banco da Amazônia, Inpa, MPEG and others, regarding land tenure and environmental issues. TCU has adopted several suggestions given by Imazon regarding the indicators for the audit, such as the number of pending agrarian regularization requests and the payment of environmental fines. A preliminary draft of the audit will be presented in February 2008 and TCU hopes to have a final report approved by its Ministers in march 2008.

**Forest Community Based Management.** Imazon, together with Cifor, Fase and IEB has contributed to the land tenure regularization



ago/07	Name of the Area	City	Situation	#Formal Complaints	Area (km <sup>2</sup> )
UCF	APA of Tapajós	Itaituba	Sent to prosecutors	1	1.96
	Flona of Jamanxim	Novo Progresso	Sent to prosecutors	1	1.25
	Flona of Carajás	Parauapebas	Sent to prosecutors	1	7.69
	<b>Total of UCF</b>			<b>3</b>	<b>10.90</b>
	<b>(Federal Conservation Unit)</b>				
TI	Kayapó	Tucumã	Sent to prosecutors	10	28.68
	Xikrin do Cateté	Parauapebas	Sent to prosecutors	8	36.50
	<b>Total de TI (Indigenous Land)</b>			<b>18</b>	<b>65.18</b>
	<b>Total in August</b>			<b>21</b>	<b>76.08</b>
set/07	Name of the Area	City	Situation	Formal Complaints	Area (km <sup>2</sup> )
UCF	Flona of Jamanxim	Novo Progresso	Sent to prosecutors	6	4.30
	Rebio Nasc. Serra do Cachimbo	Novo Progresso	In preparation	2	0.82
	Flona of Itacaiúnas	Marabá	In preparation	9	4.88
	Flona of Sacará-Taquera	Oriximiná	In preparation	2	2.79
	<b>Total de UCF</b>			<b>17</b>	<b>10.00</b>
TI	Apterewa	São-Félix do Xingu	Sent to prosecutors	9	5.58
	<b>Total de TI</b>			<b>9</b>	<b>5.58</b>
	<b>Total in September</b>			<b>9</b>	<b>15.58</b>
out/07	Name of the Area	City	Situation	Formal Complaints	Area (km <sup>2</sup> )
UCF	Flona of Jamanxim	Novo Progresso	In preparation	2	2.18
	Esec da Terra do Meio	Altamira	In preparation	1	0.58
	<b>Total de UCF</b>			<b>3</b>	<b>2.76</b>
	<b>Total in October</b>			<b>3</b>	<b>2.76</b>
nov/07	Name of the Area	City	Situation	Formal Complaints	Area (km <sup>2</sup> )
	<b>Total in November</b>			<b>0</b>	<b>0</b>
dez/07	Name of the Area	City	Situation	Formal Complaints	Area (km <sup>2</sup> )
	<b>Total in December</b>			<b>0</b>	<b>0</b>
	<b>Total of formal complaints</b>			<b>47</b>	<b>94.42</b>

Formal complaints of deforestation of 2007 by Protected Areas.

of 243,000 hectares of forest, thus benefiting 540 families in cities in the mouth of the Amazon river. Several qualification workshops and forums about land tenure and forest management were done in the process. Information generated in the workshops was the basis for the creation of land tenure applications to public agencies. Moreover, communitarian qualification has enabled them to actively take part in the creation of management plans and plans to use the areas of such communities.

Imazon also has contributed to the training of 435 traditional people (125 women) of the area on forest management techniques, community based organization, participatory mapping, market and price planning and market studies and marketing; as well as training of 19 field technicians and researchers from communities of the Amazon estuary (5 women) on practical methods of public policies analysis.

**Forest Community Based Management Guide.** Publication widely disseminated in na-

The launch gathered the presence of about 200 people including participations of

**Protected Areas (Northern Pará State).**

The map displays the Amazon region in Brazil, focusing on the states of Roraima, Pará, Amazonas, and Mato Grosso do Sul. It illustrates the distribution of land use, protected areas, and jurisdiction. Key features include:

- Protected Areas:** Grão-Pará Ecological Station (4.2 million ha), Trombetas Mippera (4 million ha), Trombetas State Forest (3.2 million ha), Paru State Forest (3.6 million ha), and others.
- Land Use:** Sustainable Use (green), Full Protection (yellow), and Indigenous Lands (orange).
- Jurisdiction:** Federal (white), State (dotted), and African Brazilian Lands (pink).
- Cities:** Manaus, Belém, and others are marked with black dots.
- Geographical Context:** The map shows the Amazon River and its tributaries, as well as neighboring countries like Guyana, Suriname, and French Guiana.

20



vation units, its creation and implementation mechanisms and its potential benefits.

**Capacity building.** Imazon established partnerships for geoprocessing and remote sensing trainings using tools developed by the institute. The partners are public agency technicians, NGOs and other institutions. As a result of the increase of demand for trainings, Imazon decided to create its Training Center, which will be opened in 2008.

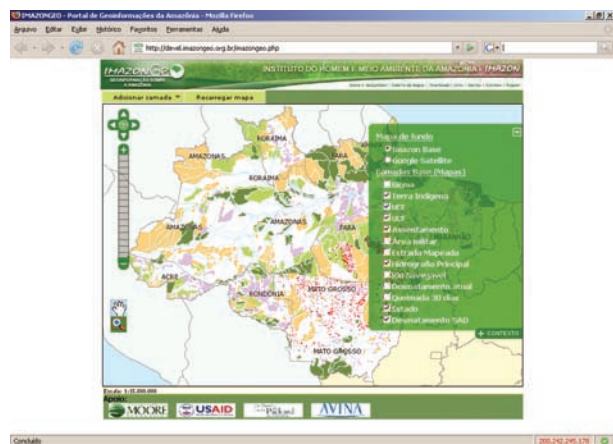
**Pact for the end of deforestation in the Amazon.** In October 2007, Imazon, together with eight NGOs, launched the National Pact for the Valorization of the Forest and for the End of Deforestation in the Amazon. The Pact for Zero Deforestation proposes the reduction of deforestation in the Amazon to zero until 2015, adopting an annual target system. The project includes the provision of measures for land regularization, efficiency of enforcement and incentive to sustainable activities.

## DISSEMINATION

**ImazonGeo.** As part of the forestry transparency initiative, Imazon launched ImazonGeo, a geoinformation portal about the Legal Amazon whose objective is to provide information about the situation and the dynamic of the occupancy of the region. ImazonGeo uses results from geographic analysis based on social-economical data and on thematic maps (political and agrarian limits, infrastructure, the use of the land, human pressure, etc.). Data and geoinformation are organized in interactive maps and reports that meet specific needs of each user, including the Forestry Transparency Bulletin. Besides, the system makes available “Warnings” (SAD) about the occurrence of deforestation, burnings and logging exploitation in the cities, Protected Areas and settlements of land reform.

Since its launching, in June 2007, ImazonGeo has already had over 9 thousand accesses with approximately 450 actions (hits).

Ninety Protected Areas were included to receive deforestation warnings encompassing 48 indigenous lands and 50 conservation units. Furthermore, warnings have been generated to all the territory of Pará and Mato Grosso. The Portal website is [www.imazon.org.br/imazongeo](http://www.imazon.org.br/imazongeo) and it can also be directly accessed through [www.imazongeo.org.br](http://www.imazongeo.org.br).



New version of ImazonGeo to be launched in 2008.

**Imazon in the media.** In 2007, Imazon was strengthened as one of the main sources of information on the Amazon. In general, Imazon was mentioned as a source of data and information about the Amazon. The news, especially the ones based on studies or publications of the Institute, had large repercussion in the media, especially in TV, newspapers and radios. There were also news where the researchers were invited to explain Imazon's opinions about important or emerging themes in the media; articles about the process to formulate public policies; and articles that dealt with the Institute itself as an example of a successful organization of the third sector.

In most of the articles published in 2007, the name “Imazon” appeared in the lead, privileging information generated by the Institute. Imazon's name can also be seen on titles and subtitles on famous newspapers articles, such as *O Estado de São Paulo*. Opinion

formers well-known in Brazil, such as Miriam Leitão, Marcos Sá Corrêa, Elio Gaspari, Marcelo Leite, Thomas Trauman, André Trigueiro and Sérgio Abranches also mentioned Imazon as a source of information. See below Imazon's citations on the media, per type of means of transmission:

**Newspapers.** Imazon had over 140 entries in printed newspapers all over the country. There were cover articles (motivated by studies about cattle ranching and forestry transparency) in both newspapers.

**Magazines.** The entries in weekly publications and special magazines were also expressive in 2007. There were 20 citations in total. Imazon's studies were the base to detailed articles in magazines such as *Exame*, *Carta Capital*, *Veja*, *Galileu*, *National Geographic (Brazilian edition)* and *Época*.

**Websites.** Imazon worked with several subjects that interested the population and which have been published on the internet. There were entries in popular websites, such as G1, Uol, Terra, YahooNotícias and Carta Maior; and in websites specialized in environment news such as *Amazônia.org* (79 entries), *O Eco* (37 entries), *Pará Negócios* (16 articles) and *Ambiente Brasil* (10 news).

**Agencies.** News agencies broadly published studies done by Imazon, which were reproduced all over Brazil by small, medium and large sized newspapers. Some of the agencies we can mention are *BBC Brasil*, *IPS*, *Reuters*, *FolhaPress* and *Agência Estado*.

**Radio.** Imazon had 40 entries, including radios such as *BandNews FM*, *CBN*, *RadioBras*, *Rádio Nacional da Amazônia* and *Rádio Cultura* (Pará).

**TV.** Imazon has nationally been source of data to the program of *TV Cultura* from São Paulo, *Repórter Eco*. Besides that, Imazon appeared on TV newscasts from *Rede Globo*, such as *Jornal Nacional*, *Jornal Hoje* and *Bom Dia Brasil*; in thematic programs, such as *Globo Rural*; in news from *BandNews* and *TV Record*.

**International.** Imazon's studies were the base for articles in international newspapers and websites, such as: *The Guardian*, *San Francisco Chronicle*, *La Nación* and *Portugal Digital*; and specialized websites such as *Cattle Network* (page dedicated to cattle ranching, in English), *Mongabay.com* (blog dedicated to the environment, in French), *Complus Alliance* (Alliance of Communicators for Sustainable Development, in English), *Tierra America* (news agency, in Spanish); and in magazines such as *Scientific American*.

**Seminars.** In 2007, Imazon's researchers gave lectures in more than 35 events of diverse audiences including executive, legislative and judiciary (state and federal) powers, public prosecutors, private sector, NGOs and other social organizations. The total audience of these seminars was about 5,500 people.

#### The main seminars:

- Adalberto Veríssimo delivered a lecture about forest conservation in the Amazon at the VI Global Philanthropy Forum 2007: Leveraging Markets and Entrepreneurship, an event that gathers together the "new philanthropy" of the United States, widely represented by the foundations of Silicon Valley, in California. The event took place in the headquarter of Google and had the presence of the former USA's President, Bill Clinton.

- Carlos Souza Jr. talked about the state-of-art of monitoring forest degradation and deforestation through satellite images on the 2<sup>nd</sup> GOFC-GOLD Workshop on Reducing Emissions from Deforestation, in Santa Cruz de La Sierra, Bolivia, and on the XIII Brazilian Symposium of Remote Sensing, in Florianopolis (Brazil).

- Paulo Amaral talked about Communitarian Forest Management in an event organized by ITTO [International Tropical Timber Organization] and the Brazilian Forestry Service called *Manejo de Bosques Comunes y Empresas Comunitarias Forestales: Temas y Oportunidades Mundiales*.



Number of entries per type of means of communication:

Means of Communication	Quantity
Newspapers	141
Magazines	20
Websites	622
Agencies	42
Radio	30
TV	20

### Downloads

The publications with the highest quantity of download in 2007 were:

The Brazilian Amazon and the Millenium Development Golas (The State of Amazon: Indexes #1; Portuguese Edition)	1223
Satellite images to evaluate forest management plans	1071
Deforestation in land reform settlements in the Amazon	952
Log expansion in the Amazon	847
Fructiferous and useful plants on the Amazon life	843
Manual for communitarian forest management	834
Advances of endogenous roads in the Amazon	572
The efficacy of the enforcement of environmental crimes by IBAMA for the protection of forests in Pará	559
Forestry facts of the Amazon 2005	515
Forest Management by firms in the Brazilian Amazon: restrictions and opportunities	507

In 2007 there were more than 15 thousand downloads of publications from Imazon's webpage.

- Paulo Barreto delivered a series of lectures about the land tenure in the Brazilian Amazon to the World Bank, Brazilian Forest Service, CNA (National Confederation of Agriculture), Federal Prosecution Service, PGE - PA (Attorney's Office of the State of Pará), Iterpa (Land Agency of Pará), State Court in Pará and NGOs.

- Brenda Brito talked about the challenges of environmental law enforcement in the Amazon's forestry sector to the delegation of the Indonesia government during their visiting to Amazon region.

## PUBLIC POLICIES

Imazon participated in several actions to design and help implementing public policies. First, the publication of monthly reports (Forest Transparency Initiative), which revealed an increase on the deforestation in Brazilian Amazon and contributed for the revision by the federal government of its plan to combat deforestation in the region. To stop the new increase on deforestation, the federal government announced in the beginning of 2008 new measures to fight against deforestation in the

command and control field, land tenure and economic instruments.

In 2007, Imazon signed agreements with Pará's Prosecution Services (at State and Federal level) to improve the actions against illegal deforestation in Conservation Units and in Indigenous Lands. Imazon periodically sends reports, in the form of formal complaints, with the location of illegal deforestation within the Protected Areas. On the other hand, the Public Prosecutors use these complaints to demand actions from environmental agencies which are responsible for the management and protection of these lands.

Imazon launched, together with other NGOs, the Pact for Zero Deforestation (*Desmatamento Zero*) in the Amazon, an initiative to eliminate deforestation by the end of 2015 through economic incentives (with emphasis on the payment for environmental services) to rural producers in the Amazon.

Imazon's studies showed that the federal government collects less than 5% of environmental fines in the Amazon, weakening the effort to fight against deforestation in the region. Based on these and other analyses, the federal government created a task force to improve the enforcement against illegal deforestation. One of the results was to prioritize the 150 cases of environmental fines

that correspond to the largest fines that have been issued since 2006 in the States of Pará, Mato Grosso and Rondônia. Moreover, the government published the list of interdicted areas due to environmental crimes. People who finance the production or who buy products that come from the interdicted areas will be subject to similar fines to the ones who committed an environmental crime.

Finally, the study about the boom-bust land use dynamics published by Imazon showed that deforestation causes the worse scenario: natural resources depleted and aggravation of poverty. This study has been widely used by opinion makers and policy makers to define opinions and decisions of actions to reduce and stop deforestation and forest degradation in the Brazilian Amazon.

## TRAINING

In 2007 Imazon invested on the professional training of its employees, fellowships for graduate courses, English classes and computer training. Moreover, Imazon hired ten interns to develop activities in the areas of environmental law, social communication and remote sensing. The employees and interns also attended symposiums, conferences and seminars.



# PUBLICATIONS LIST

In 2007, Imazon published two books in English, 14 scientific articles and chapters of books, seven articles in congresses and symposiums, ten issues of Forest Transparency Newsletter and two other publications, totalizing 35 publications.

## SCIENTIFIC ARTICLES

- Valle, D., Phillips P., Vidal, E., Schulze, M., Grogan, J., Sales, M., Gardingen, P. V., 2007. Adaptation of a spatially explicit individual tree-based growth and yield model and long-term comparison between reduced-impact and conventional logging in eastern Amazonia, Brazil. *Forest Ecology and Management*. (243) 187-198.
- Monteiro, A. L., Souza Jr., C. & Lingnau, C., 2007. *Avaliação de imagens do manejo florestal na Amazônia*. *Scientia Forestalis*. (75) 95-104.
- Zarin, D. J., Schulze, M., Vidal, E. & Lentini, M., 2007. Beyond reaping the first harvest: management objectives for timber production in the Brazilian Amazon. *Conservation Biology*. 21 (4) 916-925.
- Ribeiro, B., Veríssimo, A., 2007. *Padrões e causas do desmatamento nas Áreas Protegidas de Rondônia*. *Natureza e Conservação*. 05 (01) 15-26.
- Sales, M., Souza Jr., C. M., Kyriakidis, P. C., Roberts, D. A. & Vidal, E., 2007. Improving Spatial Distribution Estimation of Forest Biomass with Geostatistics: a case study of Rondônia, Brazil. *Ecological Modelling*, 205 (1-2), 221-230.
- Chambers, J., Asner, G., Morton, D., Anderson L., Saatchi, S., Espírito-Santo, F., Palace, M. & Souza Jr., C.M., 2007. Regional ecosystem structure and function: ecological Insights from remote sensing of tropical forests. *Trends in Ecology and Evolution*, 22 (8), 414-23.
- DeFries, R., Achard, F., Brown, S., Herold, M., Murdiyarso, D., Schlamadinger, B., Souza Jr., C.M., 2007. Earth observations for estimating greenhouse gas emissions from deforestation in developing countries. *Environmental Science and Policy*, 385-394.
- DeFries, R., Achard F., Brown S., Herold M., Murdiyarso D., Schlamadinger B. & Souza Jr., C., 2007. Reducing Greenhouse Gas Emissions from Deforestation in Developing Countries: Considerations for Monitoring and Measuring. *Environmental Science and Policy*.
- Monteiro, A. L., Lingnau, C., Souza Jr., C., 2007. *Classificação orientada a objeto para detecção da exploração seletiva de madeira na Amazônia*. *Revista Brasileira de Cartografia*. 59 (03) 239-248.
- Arima, Y. A., Simmons, S. C., Walker, R. T. & Cochrane, M., 2007. Fire in the Brazilian Amazon: a spatially explicit model for policy impact analysis. *Journal of Regional Sciences*. - 541-567.
- Pfaff, A., R. Walker., S. Aldrich., M. Caldas., E. Reis., S. Perz., C. Bohrer., Arima, E., W. Laurance & K. Kirby, 2007. Road investments, spatial spillovers, and deforestation in the Brazilian Amazon. *Journal of Regional Sciences*. 47 (1) 109-123.
- Caldas, M., R. T. Walker., Arima, E., E. Perz., P. R Aldrich & C. S. Simmons, 2007. Theorizing land cover and land use change: the peasant economy of colonization in the Amazon basin. *Association of American Geographers*. 97 (1) 86-110.

## CHAPTERS OF BOOKS

- Veríssimo, A., Ribeiro, M., 03/2007. *Áreas protegidas na Amazônia: oportunidades para*

conservação e uso sustentável. In: *Desenvolvimento da agricultura tropical: quatro décadas de inovações tecnológicas, institucionais e políticas*. Embrapa - CGIAR. 01-28.

- Souza Jr., C., Monteiro, A. L., 2007. Avanços e aplicações do sensoriamento remoto no monitoramento e controle de planos de manejo e concessões florestais na Amazônia brasileira. In: Luis E. Aragón. *População e meio ambiente na Pan-Amazônia*. UFPA/ NAEA. 115-125.

## ARTICLES IN SYMPOSIUMS AND CONGRESSES

- Martins, H., Amaral, P., Nascimento, K., Reis, R., 2007. Avaliação da pressão humana na Reserva Extrativista Verde para Sempre no oeste do Pará. Florianópolis, Brasil: XIII Simpósio Brasileiro de Sensoriamento Remoto.
- Nunes, S., Souza Jr., C., 2007. Avaliação de modelos de mistura de pixel para áreas urbanas. Florianópolis, Brasil: XIII Simpósio Brasileiro de Sensoriamento Remoto.
- Souza Jr., C. 2007. Avanços do sensoriamento remoto para o monitoramento da exploração madeireira na Amazônia. Florianópolis, Brasil: XIII Simpósio Brasileiro de Sensoriamento Remoto.
- Balieiro, C., Souza Jr., C., 2007. Caracterização da dinâmica de garimpos na região de Tapajós com imagens Landsat. Florianópolis, Brasil: XIII Simpósio Brasileiro de Sensoriamento Remoto.
- Brandão Jr., Souza Jr., C., Ribeiro, J. & Sales, M., 2007. Desmatamento e estradas não-oficiais da Amazônia. Florianópolis, Brasil: XIII Simpósio Brasileiro de Sensoriamento Remoto.
- Monteiro, A. L., Souza Jr., C., 2007. Estimativa de volume de madeira explorada com imagens de satélite: aplicações para o monitoramento de planos de manejo florestal na Amazônia. Florianópolis, Brasil: XIII Simpósio Brasileiro de Sensoriamento Remoto.

- Gond, V., Wiles, J., Souza Jr., C., Tion, K., Goitia, C., Zwaan, D., Fontaine, M., Griffith, S., Romero, M. & Noquerón, R., 2007. Foreseen: A forest and remote sensing exchanges Network. Proceedings of the Second International Vegetation User Conference.

## FOREST TRANSPARENCY



In 2007, Imazon published, together with ICV, seven editions of the Forest Transparency Bulletin (*Boletim Transparência Florestal*) in the State of Mato Grosso. Moreover, Imazon published three editions of the Forestry Transparency Bulletin in the State of Pará.

## TECHNICAL REPORT

- Sabogal C., Lentini, M., Pokorny, B., Silva, J. N., Zweede, J., Veríssimo, A., Boscolo, M., 2007. Manejo florestal empresarial en la Amazonia brasileña. Restricciones y oportunidades para la adopción de buenas prácticas de manejo. *Relatório Técnico. Recursos Naturales y Ambiente/no. 49:81-89*.

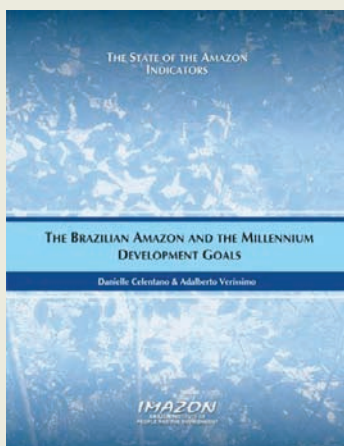
## OTHER PUBLICATIONS

- Amaral, P., Amaral Neto, M., Nava, F., Fernandes, K., 07/2007. Manejo florestal comunitário na Amazônia brasileira. *Serviço Florestal Brasileiro*. 21 p.



## SUMMARY OF THE BOOKS

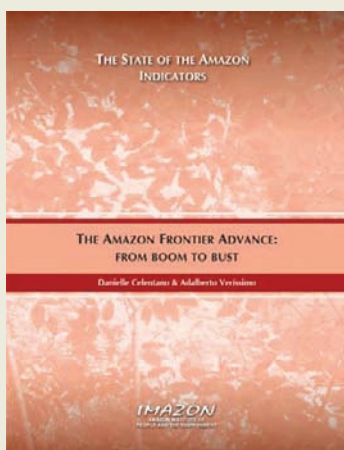
### The State of Amazon: Indexes



(Published in Portuguese  
and English)

- ***The Brazilian Amazon and the Millenium Development Goals.*** Celentano, D. & Veríssimo, A., 2007. *The State of Amazon: Indexes # 1.* Belém: Imazon. 50 p.

It evaluates the evolution of the Millennium Goals in the Brazilian Amazon. The book shows that in 2005 the situation of most indicators analyzed in the study improved in relation to 1990. However, in general, the study classifies this improvement as unsatisfactory since the Amazon region is below the national average. Out of the ten goals analyzed in the study, only one was reached in the region and two other can be reached by the end of 2015, according to the criteria established by the United Nations.



(Published in Portuguese  
and English)

- ***The Amazon Frontier Advance: from boom to bust.*** Celentano, D. & Veríssimo, A., 2007. *The State of Amazon: Indexes # 2.* Belém: Imazon, 46 p.

It analyzes social-economical indicators related to the violence in the different borders of occupancy and deforestation of the Amazon (non-forestry, deforested, under pressure and forestry) to test the thesis that economical development follows the *boom-bust* standard as proposed by Schneider *et al.* (2000). The book shows that, in the short-term, economical indicators (GDP and employment) grow and that HDI is favored by the creation of income and attraction of immigrants. However, costs are high: violence, forests degradation and deforestation. On the long-term, deforested areas have decreased on violence rates and social-economical indicators are lower than the areas where deforestation is occurring.

# ORGANIZATION

## DIRECTORS

### General Assembly

- **Adalberto Veríssimo** - Senior Researcher (Imazon).
- **Christopher Uhl** - Professor (State University of Pennsylvania - USA).
- **Cândido Paraguassu de Lemos Éleres** - Lawyer and Professor (Unama).
- **David Gibbs McGrath** - Professor (Naea/UFGA).
- **Luiz Carlos Estraviz Rodriguez** - President of the Board of Directors of Imazon. Professor of Forestry Economy (Esalq/USP).
- **Paulo Barreto** - Senior Researcher (Imazon).
- **Paulo Amaral** - Senior Researcher (Imazon).

### Board of Directors

- **Luiz Carlos Estraviz Rodriguez** - President of the Board of Directors of Imazon. Professor of Forestry Economy (Esalq/USP).
- **André Guimarães** - Vice-President of the Board of Directors of Imazon. Executive Director (Ibio).
- **Garo Batmanian** - Senior Specialist in Environment (World Bank).
- **José Natalino da Silva** - Researcher (Embrapa).
- **Maria José Gontijo** - Executive Director (IEB).
- **Robert Schneider** - Consultant.

### Executive Director

- **Carlos Souza Júnior** - Executive Director.
- **Brenda Brito / Ana Cláudia Rodrigues** - Vice-Director.

### Advisory Council

- **Adriana Ramos** - ISA.
- **Jorge Yared** - Embrapa.
- **Luis Gonzaga da Silva Costa** - Ufra.
- **Manoel Pereira** - Cikel Brasil Verde S/A.

- **Peter May** - UFRJ.
- **Rita Mesquita** - Inpa.
- **Robert Buschbacher** - University of Florida - USA.

### Statutory Audit Committee

- **Johan Zweed** - IFT.
- **Marcelo Carneiro** - UFMA.
- **Raimundo Moraes** - MPE of Pará.

## TEAM (DECEMBER 2007)

### Researchers

- **Adalberto Veríssimo** - Senior Researcher. Agronomy Engineer (Ufra). M.Sc. in Ecology (State University of Pennsylvania - USA).
- **Amintas Brandão Júnior** - Assistant Researcher. Environmental engineer (Uepa). Specialization in Statistics (UFPA).
- **Anderson Costa** - Assistant researcher. Forest Engineer (Ufra). Specialization in Statistics (UFPA).
- **André Monteiro** - Assistant Researcher. Forest Engineer (Ufra). Specialization in Remote Sensor (UFPA). Master in Forest management with emphasis in Remote Sensing (UFPR).
- **Andréia Pinto** - Assistant Researcher. Biologist (UFPA), Master in Theory and Research of Behavior (UFPA). Doctor in Social-Environmental Sciences (UFPA).
- **Brenda Brito** - Assistant Researcher. Lawyer (UFPA). JSM candidate (Stanford Law School - USA).
- **Carla Alencar** - Assistant Researcher. Environmental Engineer (Uepa).
- **Carlos Souza Júnior** - Senior Researcher. Geologist (UFPA). M.Sc. in Soil Sciences with emphasis on Remote Sensing (State University of Pennsylvania - USA). Ph.D. (University of California - Santa Barbara - USA).



- **Denys Pereira** - Assistant Researcher. Forest Engineer (Ufam).
- **Elis de Araújo** - Auxiliary Researcher. Lawyer (UFPA).
- **Francy Nava** - Auxiliary Researcher. Environmental Engineer (Uepa).
- **Julia Ribeiro** - Assistant Researcher. Agronomy Engineer (Ufra).
- **Heron Martins** - Assistant Researcher. Environmental Engineer (Uepa).
- **Márcio Henrique Sales** - Assistant researcher. Bachelor in Statistics (UFPA).
- **Marco Lentini** - Assistant Researcher. Forest Engineer (Esalq/USP). Master in Forestry. Resources and Conservation (University of Florida - USA).
- **Mariana de Araújo** - Auxiliary Researcher. Forest Engineer ((FAEF/SP).
- **Netuno Leão** - Assistant Researcher. Chemist (UFC).
- **Paulo Amaral** - Senior Researcher. Agronomy Engineer (Ufra). M.Sc. in Management and Conservation of Tropical Rain Forest and Biodiversity (Catie - Costa Rica).
- **Paulo Barreto** - Senior Researcher. Forest Engineer (Ufra). M.Sc. in Forest Sciences (Yale University- USA).
- **Sâmia Nunes** - Assistant Researcher. Forest Engineer (Ufra).
- **Sanae Hayashi** - Assistant Researcher. Forest Engineer (Ufra). Master in Tropical Botany (Ufra).
- **Simone Bauch** - Assistant Researcher. Forest Engineer (Esalq/USP). M.Sc. in Forest Sciences/Forestry Economy and PhD candidate in Forest Sciences (State University of North Carolina - USA).

#### Technicians

- **Cintia Balieiro** - Geoprocessing Technician. Agronomy Engineer (Ufra).
- **Kátia Pereira** - Geoprocessing Technician. Chemistry Engineer (UFPA). Master in Environmental Geochemistry (UFPA).
- **Marcelo Galdino** - Field Auxiliary. Forest Technician (Juscelino Kubitschek School). Student of Forestry Engineering (Ufra).
- **Rodney Salomão** - Laboratory manager. Forest Engineer (Ufra). Specialization in Statistics (UFPA). Geoprocessing technician.
- **Valdir Pinto** - Field Auxiliary.
- **Victor Lins** - Computing Engineer (UFPA).

#### Administration

- **Aline Ferreira** - Administrative Assistant. Student of Administration in Information Systems Management (Faci).
- **Ana Cláudia Rodrigues** - Accounting Manager. Bachelor in Accounting Sciences (UFPA).
- **Daniel Souza** - Network Administrator. Data Processing Technologist (Unama).
- **Elson Vidal** - Financial Manager. Bachelor in Administration and Environmental Management (Iesam).
- **Emerson Botelho** - Janitor.
- **Greice Ferreira** - Administrative Manager. Bachelor in Social Communication with License in Public Relations (Unama). Specialization in Strategic and Quality Management (Ucam).
- **Isabelle Corrêa** - Financial Assistant. Bachelor in Accounting Sciences (Iesam).
- **Izabel Barros** - General Services Supplier.
- **Júlia Beltrão** - Accounting Assistant. Bachelor in Accounting Sciences (Iesam).
- **Lorenda Raiol** - Communication Adviser. Bachelor in Social Communication with license in Journalism (UFPA).
- **Manoel Coelho** - Administrative Assistant.
- **Maria de Nazaré Costa** - Cook.
- **Rosa Pinheiro** - General Services Supplier.
- **Selma Ramos** - Cook.

- **Verônica Oki** - *Controller*. Bachelor in Accounting Sciences (Iesam).
- **Wanessa Ferreira** - Administrative Assistant. Bachelor in Accounting Sciences (Iesam).

#### Trainees

- **Adriana Fradique** - Student of Social Communication and Journalism (UFPA).
- **Daniel Santos** - Student of Environmental Engineering (Uepa).
- **Hugo Mercês** - Law student (UFPA).
- **Marília Mesquita** - Student of Environmental Engineering (Uepa).

#### Associated Researchers

- **Anthony Anderson** - Ph.D. in Biology (University of Florida - USA).
- **Christopher Uhl** - Ph.D. in Ecology (State University of Pennsylvania - USA).
- **Edson Vidal** - Doctor in Environmental Engineering Science (EESC/USP) and Professor of Esalq/USP.
- **Eugênio Arima** - Ph.D. in Economic Geography and Quantitative Methods (University of Michigan - USA).
- **James Grogan** - Ph.D. in Ecology (University of Yale - USA).
- **Jeffrey Gerwing** - Ph.D. in Ecology (State University of Pennsylvania - USA).
- **Mark Cochrane** - Ph.D. in Ecology and professor of the University of South Dakota - USA.

- **Mark Schulze** - Ph.D. in Biology (State University of Pennsylvania - USA).

#### Visiting Researchers

- **Alexander Macpherson** - PhD candidate in Forestry Economy (University of Florida - USA).
- **Christopher Barber** - PhD candidate (State University of South Dakota - USA).
- **Doenja Kuiper** - Studying for a Master's Degree in Forest and Nature Conservation (University of Wageningen - Holland).
- **Erin O'Donnell Sills** - Economist (State University of North Carolina - USA).
- **John Tustin** - student of Law (University of Texas - USA).
- **Marisa Gesteira** - Ecologist (Unicamp).

#### Other collaborators in 2007:

Ana Carolina Casemiro Vieira, Gustavo Crestani Fava, Helga de Oliveira Yamaki, Irilene do Socorro Souza Vale, Jaqueline do Socorro Oliveira, João Guilherme Vogado Abrahão and Rodolfo Gadelha de Souza as trainees.

Danielle Camargo Celentano Augusto, Marina Londres da Cunha and Wandreia Natalina dos Santos Baitz as assistant researchers, developed important studies in different projects of the Institute. Imazon wishes the best of luck and success on their professional lives.

# ABSTRACT OF THE FINANCIAL STATEMENT OF 2007

DONORS		
Gordon and Betty Moore Foundation	2,230,704.39	35.14%
Commission of the European Communities	1,554,463.49	24.49%
IEB- Inst. Internacional de Educação do Brasil [International Institute of Education of Brazil]	612,726.72	9.65%
David and Lucile Packard Foundation	572,508.36	9.02%
Instituto do Meio Ambiente do Acre (Institute for the Environment of the State of Acre)	300,000.00	4.73%
Avina Stiftung Foundation	251,420.84	3.96%
ITTO - International Tropical Timber Organization	122,002.87	1.92%
ADT - Amigos da Terra [Friends of the Earth]	116,765.02	1.84%
World Bank	98,764.21	1.56%
The Embassy of the Kingdom of the Netherlands	67,098.38	1.06%
Others	367,533.62	5.79%
Earnings of financial investment	54,432.42	
	<b>6,348,420.32</b>	<b>100.00%</b>
INVESTMENT OF RESOURCES		
Research	3,198,678.19	56.53%
Administration	1,153,653.45	20.39%
Partners	759,581.61	13.42%
Investment	354,871.66	6.27%
Publication and Disclosure	165,113.47	2.92%
Training	26,959.52	0.48%
	<b>5,658,857.90</b>	<b>100.00%</b>
<b>SURPLUS 2007</b>	<b>689,562.42</b>	





Amazon Institute of People and the Environment - IMAZON					
Abstract of the Balance Sheet for account periods ended on December 31st, 2006 and 2007					
Unsecured Assets and Liabilities	2007	2006	Liabilities and Stockholders' equity	2007	2006
<b>Current</b>			<b>Current</b>		
Available resources	470,180	234,039	Suppliers	12,043	58,812
Financial investments	794,087	811,294	Social and labor liabilities	324,774	317,675
Advances	355,938	77,200	Tax liabilities	24,957	54,141
Prepaid expenditures	15,273	15,990	Liabilities with resources of Projects	1,837,919	1,779,004
Other credits	37,538	69,501		2,199,694	2,209,632
	1,673,015	1,208,024			
<b>Non-current</b>			<b>Non-current</b>		
Long term receivables			Stockholders' equity		
Advances	135,221	135,221	Corporate Assets	475,523	
			Accumulated Surplus	29,595	
<b>Permanent</b>			<b>Accumulated Deficit</b>	<b>(60,707)</b>	
Fixed Assets	835,869	724,686		444,411	
<b>Total of unsecured Assets and Liabilities</b>	<b>2,644,105</b>	<b>2,067,931</b>			
Corporate Assets		164,785			
Deficit (Surplus) for the Account Period		(23,084)			
		141,701			
<b>Total of unsecured Assets and Liabilities</b>	<b>2,644,105</b>	<b>2,209,632</b>	<b>Total of liabilities and stockholders' equity</b>	<b>2,644,105</b>	<b>2,209,632</b>
The explanatory notes are an integral part of the financial statements. The complete financial statements with the respective explanatory notes are available on the website <a href="http://www.imazon.org.br">www.imazon.org.br</a>					

Amazon Institute of People and the Environment - IMAZON		
Abstract of the Statements of Surplus and Deficit for account periods ended on December 31st, 2006 and 2007		
	2007	2006
<b>Operating Incomes</b>		
Administrative tax of projects and programs	1,082,813	1,208,284
Income with rendering of services	630,149	396,910
Publication and Disclosure	282	2,011
Donations	22,122	18,636
	1,735,366	1,625,841
<b>Expenditures</b>		
Costs with rendering of services	(357,233)	(281,826)
Operating expenditures	(1,310,834)	(1,330,955)
	(1,668,068)	(1,612,781)
Financial income	(132,708)	(47,460)
Non-operating income	4,703	57,484
<b>Year-end Surplus/Deficit</b>	<b>(60,707)</b>	<b>23,084</b>
The explanatory notes are an integral part of the financial statements. The complete financial statements with the respective explanatory notes are available on the website <a href="http://www.imazon.org.br">www.imazon.org.br</a>		

Amazon Institute of People and the Environment - AMAZON			
Abstract of the Statements as to the changes of stockholder's equity of account periods ended on December 31st, 2006 and 2007			
DESCRIPTION	Corporate Assets	Accumulated Surplus	Total
<b>Balances on December 31st, 2005</b>	<b>2,621</b>	<b>35,204</b>	<b>37,825</b>
Adjustment of previous account periods	-	(202,610)	(202,610)
Adjusted balance of opening	2,621	(167,406)	(164,785)
Deficit takeover to corporate assets	(167,406)	167,406	-
Surplus of account period			
Originally presented		29,595	29,595
Adjustments identified in 2007, relative to 2006		(6,511)	(6,511)
Surplus of 2006 account period, adjusted		23,084	23,084
<b>Balances on December 31st, 2006</b>	<b>(164,785)</b>	<b>23,084</b>	<b>(141,701)</b>
Surplus takeover to corporate assets	23,084	(23,084)	-
Balance of projects ended in 2007	646,819	-	646,819
Deficit of 2007 account period		(60,707)	(60,707)
<b>Balances on December 31st, 2007</b>	<b>505,118</b>	<b>(60,707)</b>	<b>444,411</b>
The explanatory notes are an integral part of the financial statements. The complete financial statements with the respective explanatory notes are available on the website <a href="http://www.imazon.org.br">www.imazon.org.br</a>			

Amazon Institute of People and the Environment - AMAZON		
Abstract of the Statements as to the Origin and Investments of Resources for account periods ended on December 31st, 2006 and 2007		
	2007	2006
<b>Origin of resources</b>	<b>829,801</b>	<b>318,287</b>
Year-end Surplus/Deficit	(60,707)	23,084
Depreciation	236,751	211,103
Balance of projects ended in 2007	646,819	
Reduction of fixed assets	6,937	84,100
<b>Investment of resources</b>	<b>354,872</b>	<b>261,329</b>
Addition in fixed assets	354,872	129,109
Decrease of current liabilities		69,858
Increase of long-term receivables		62,362
<b>Increase(decrease) of current assets</b>	<b>474,929</b>	<b>56,958</b>
<b>Statement of Current Asset Variation</b>		
<b>Current assets</b>	<b>464,991</b>	<b>(1,499,342)</b>
At the end of the account period	1,673,015	1,208,024
At beginning of the account period	1,208,024	2,707,366
<b>Current liabilities</b>	<b>(9,938)</b>	<b>(1,556,300)</b>
At the end of the account period	2,199,694	2,209,632
At beginning of the account period	2,209,632	3,765,932
<b>Increase(decrease) of current assets</b>	<b>474,929</b>	<b>56,958</b>
The explanatory notes are an integral part of the financial statements. The complete financial statements with the respective explanatory notes are available on the website <a href="http://www.imazon.org.br">www.imazon.org.br</a>		

# INDEPENDENT AUDITORS



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Torre Torino  
Caixa Postal 61005  
05001-903 São Paulo, SP - Brasil  
Telefone (11) 3674-2000  
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(A free translation of the original in Portuguese)

## Report of Independent Auditors

To the Management, Members and Associates  
Instituto do Homem e Meio Ambiente  
da Amazônia - IMAZON

- 1 We have audited the accompanying balance sheets of Instituto do Homem e Meio Ambiente da Amazônia - IMAZON as of December 31, 2007 and 2006, and the related statements of surplus (deficit), of changes in equity and of changes in financial position for the years then ended. These financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these financial statements.
- 2 We conducted our audits in accordance with approved Brazilian auditing standards which require that we perform the audit to obtain reasonable assurance about whether the financial statements are fairly presented in all material respects. Accordingly, our work included, among other procedures: (a) planning our audit taking into consideration the significance of balances, the volume of transactions and the Institute's accounting and internal control systems, (b) examining, on a test basis, evidence and records supporting the amounts and disclosures in the financial statements and (c) assessing the accounting principles used and the significant estimates made by the Institute's management, as well as evaluating the overall financial statement presentation.
- 3 In our opinion, the financial statements audited by us present fairly, in all material respects, the financial position of Instituto do Homem e Meio Ambiente da Amazônia - IMAZON at December 31, 2007 and 2006 and the results of its operations, the changes in equity and the changes in its financial position for the years then ended, in accordance with accounting practices adopted in Brazil.
- 4 As mentioned in Note 6(c) to the financial statements, the Institute signed a "Purchase and Sale Agreement" for the acquisition of two building lots for the future construction of its headquarters. The Institute had spent the amount of R\$ 135,221 (2006 - R\$ 135,221) up to December 31, 2007 and its management is currently evaluating whether it should continue to participate in this enterprise.

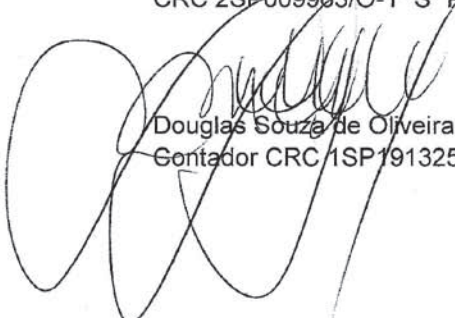


Instituto do Homem e Meio Ambiente  
da Amazônia - IMAZON

As mentioned in Note 10(c) to the financial statements, the balance sheet at December 31, 2006 and the related statements of surplus (deficit), of changes in equity and of changes in financial position for the year then ended were adjusted in relation to those previously presented.

São Paulo, May 12, 2008

  
PricewaterhouseCoopers  
International Services Ltda.  
CRC 2SP009963/O-1 "S" PA

  
Douglas Souza de Oliveira  
Contador CRC 1SP191325/O-0 "S" PA


# INITIALS

AdT	Friends of the Earth
APA	Environmental Protect Area
Catie	Tropical Agriculture Research and Training Center
CI	Conservation International
Cifor	Center for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
CNA	National Confederation of Agriculture
CSF/Brasil	Conservation Strategy Fund of Brazil
DFID	UK Department for International Development
EESC/USP	São Carlos Engineering School/University of São Paulo
Embrapa	Brazilian Agricultural Research Center
Esalq/USP	Luiz de Queiroz Agriculture School/University of São Paulo
Esec	Ecological Station
Fase	Federation of Organizations for Social and Educational Assistance
FGV	Getúlio Vargas Foundation
Flona	National Forest
Flota	State Forest
FSC	Forest Stewardship Council
Funai	Brazilian National Indian Foundation
GPS	Global Positioning System
GTA	Amazon Working Group
GTZ	German Technical Cooperation
Ibama	Brazilian Environment and Natural Resources Institute
IBGE	Brazilian Institute of Geography and Statistics
Ibio	BioAtlântica Institute
ICV	Instituto Centro de Vida
IEB	International Institute of Education of Brazil
IFT	Tropical Forest Institute
IICA	Inter-American Institute for Cooperation on Agriculture
Imaflora	Institute for Management and Certification of Agriculture and Forestry

Imazon	Amazon Institute of People and the Environment
Incra	National Institute of Colonization and Agrarian Reform
Inpa	National Institute for Research in the Amazon
Inpe	National Institute for Space Research
IPGRI	International Plant Genetic Resources Institute
ISA	Socio-Environmental Institute
Iterpa	Land Institute of the State of Pará
ITTO	International Tropical Timber Organization
JERS-1	Japanese Earth Resources Satellite
Landsat	Land Remote Sensing Satellite
MDIC	Ministry of Industry and Commerce
MMA	Ministry of the Environment
MODIS	Moderate Resolution Imaging Spectroradiometer
MPE	State Publico Prosecutors
MPEG	Emílio Goeldi Museum Pará
MPF	Federal Department of Justice
MST	Movement of the Landless Peasants
Naea	Institute of Advanced Amazonian Studies
Oema	Environment State Agency
NGO	Non-Governmental Organization
ONU	United Nations Organization
Oscip	Public Interest non-governmental Organization
PFCA	Brazilian Amazon Certified Forestry Producers Group
PGE	Attorney's Office of the State of Pará
PNF	National Program of Forests
ProManejo	Amazonia Sustainable Forest Management Support Project
Rebio	Biological Reserve
SAD	Deforestation Alert System
SAMFLOR	Support System for the Modular Forestry Management
Sebrae	Brazilian Micro and Small Business Support Service



Sema	State Secretary of the Environment
GIS	Geographical Information System
SRTM	Shuttle Radar Topographic Mission
TI	Indigenous Land
TCU	Federal Audit Court
Ucam	Cândido Mendes University
UCF	Federal Conservation Unit
EU	European Union
Uepa	University of the State of Pará
Ufam	Federal University of Amazonas
UFC	Federal University of the State of Ceará
UFMA	Federal University of the State of Maranhão
UFPA	Federal University of Pará
UFPR	Federal University of Paraná
Ufra	Federal Rural University of the Amazonia State of Pará
UFRJ	Federal University of Rio de Janeiro
Unama	University of Amazon
Unicamp	State University of Campinas
Usaid	United States Agency for International Development
WRI	World Resources Institute
WWF	World Wide Fund for Nature
ZEE	Ecologic Economic Zoning



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Text Edition and Revision in English:  
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